# Data Validation Checklist
# Semivolatile Organic Analyses

| | | | |
|---|---|---|---|
| Project: | 35TH Avenue Superfund Site | Project No: | 15268508.20000 |
| Laboratory: | TestAmerica - Savannah, GA | Job ID.: | 680-85980-1 |
| Method: | SW-846 8270C Low-Level (PAH) | Associated Samples: | Refer to **Attachment A** (Sample Summary) |
| Matrix: | Soil and water | Date(s) Collected: | 12/18/2012, 12/19/2012 |
| Reviewer: | Jane Lindsey | Date: | 01/24/2013 |
| Concurrence[1]: | Carol Lovett, Martha Meyers-Lee | Date: | 02/19/2013 |

| Review Questions | Yes | No | N/A | Samples (Analytes) Affected/Comments | Flag |
|---|---|---|---|---|---|
| 1. Were sample storage and preservation requirements met? If temperature >6°C, then J/UJ-flag results. | ✓ | | | | |
| 2. Were all COC records signed and integrity seals intact, indicating that COC was maintained for all samples? | ✓ | | | | |
| 3. Were there any problems noted in laboratory data package concerning condition of samples upon receipt? | ✓ | | | • The container for CV0235B-CS (680-85980-29) was received broken; contents were recovered. J/UJ-Flag all PAH results.<br>• One 1-Liter amber bottle for121912-RB-SIEVE was received broken. A spare bottle was available for the required analysis. | J, UJ |
| 4. Do any soil samples contain more than 50% water? If yes, then results are to be reported on a wet-weight basis. | | ✓ | | | |
| 5. Were holding times met (≤7 and 14 days from collection to extraction for aqueous and solid samples, respectively; ≤40 days from extraction to analysis)? If not, then J/UJ-flag sample results. If grossly (2x) exceeded, then flag J/R. | ✓ | | | | |
| 6. Were results for all project-specified target analytes reported? | ✓ | | | | |
| 7. Were project-specified Reporting Limits achieved for undiluted sample analyses? | ✓ | | | | |
| 8. Were samples with analyte concentrations exceeding the calibration range of the instrument re-analyzed at a higher dilution? If not, then J-flag sample result. | | | ✓ | | |
| 9. Was a method blank extracted with each batch (i.e., one per 20 samples, per batch, per matrix and per level)? | ✓ | | | | |
| 10. Were target analytes detected in the method blank? | | ✓ | | | |

[1] Independent technical reviewer

## Data Validation Checklist (Continued)

| Review Questions | Yes | No | N/A | Samples (Analytes) Affected/Comments | Flag |
|---|---|---|---|---|---|
| 11. Were target analytes detected in equipment/rinsate blanks? | ✓ | | | 121912-RB-SIEVE (680-85980-46): Chrysene @ 0.11 J µg/L (RL 0.20, DL 0.045) x soil factor (33) = 3.63 µg/kg | |
| 12. Are equipment/rinsate blanks associated with every sample? If no, note in DV report. | ✓ | | | According to the QAPP, a rinsate blank is to be collected after each decontamination event, which occurs once per week per the client. A rinsate blank (121912-RB-SIEVE) was collected during the week of 12/17/12. The rinsate blank was analyzed for PAHs under Test America Job ID 680-85980-1. | |
| 13. Were analytes detected in samples below the blank contamination action level? If yes, U-flag positive sample results <5x associated blank concentration (10x for common blank contaminants – phthalates) | ✓ | | | Blank Contamination Action Levels (BCALs) [2]:<br>• Chrysene @ 18.15 µg/Kg (3.63 µg/Kg x 5)<br><br>Sample-specific BCALs were developed by multiplying the BCAL by the sample dilution factor and dividing it by the percent solids (refer to **Attachment B**). Sample results that were less than the sample-specific BCAL have been qualified due to the presence of blank contamination. The sample result has been U-flagged, and reporting limit elevated to the amount found in the sample. | U |
| 14. Is a field duplicate associated with this Job? | | ✓ | | | |
| 15. Was precision deemed acceptable as defined by the project plans? | | | ✓ | | |
| 16. Were DFTPP ion abundance criteria (i.e., Table 3 of SW-846 8270C) met? If no, professional judgment may be applied to determine to what extent the data may be utilized. | ✓ | | | Ion abundance criteria and references were not accurately presented in the original Form Vs included in the data package (pages 27 to 30). In addition, ICV were missing from Form Vs. Revised Form Vs were provided by the laboratory on 2/12/2013 (refer to **Attachment C**). | |
| 17. Were samples analyzed within 12 hours of the DFTPP tune? If no, professional judgment may be applied to determine to what extent the data may be utilized. | ✓ | | | | |
| 18. Were initial and continuing calibration standards analyzed at the proper frequency for each instrument?<br>• Ensure that a minimum of five standards are used for the initial calibration. If no, use professional judgment to | ✓ | | | Solids:<br>• Initial Calibration: 01/02/2013, instrument MSK<br>• ICV: 01/02/2013 @ 13:47<br><br>• Initial Calibration: 01/02/2013, instrument MSY | |

[2] BCAL developed based on the maximum amount observed in all blanks

## Data Validation Checklist (Continued)

| Review Questions | Yes | No | N/A | Samples (Analytes) Affected/Comments | Flag |
|---|---|---|---|---|---|
| determine the effect on the data and note in the reviewer narrative.<br>• An initial calibration is to be associated with each sample analysis.<br>• A continuing calibration standard is to be analyzed for every 12 hours of sample analysis per instrument. | | | | • ICV: 01/02/2013 @ 19:48<br><br>Aqueous:<br>• Initial Calibration: 12/21/2012, instrument MSY<br>• ICV: 12/21/2013 @ 13:52<br>• CCV: 12/28/2012 @ 10:37 | |
| 19. Were calibration results within laboratory/project specifications?<br>• ICAL (Criteria: ≤15 mean %RSD with no individual CCC %RSD ≤30 (≤50% for poor performers), OR r≥0.995, OR $r^2$≥0.99, and RRF ≥0.050 (≥0.010 for poor performers)):<br>o If %RSD>15 (>50% for poor performers), or r <0.995, or $r^2$ <0.995, then J-flag positive results and UJ-flag non-detects<br>o If mean RRF <0.050 (<0.010 for poor performers), then J-flag positive results and R-flag non-detects<br>• ICV and CCV (Criteria: ≤20%D (≤50% for poor performers) and RF ≥0.050 (≥0.010 for poor performers)):<br>o If %D>20 (>50% for poor performers), then J-flag positive results and UJ-flag non-detects<br>o If RF <0.050 (<0.010 for poor performers), then UJ-flag non-detected semivolatile target compounds | ✓ | | | All required documentation (Form VII and raw data) were not included in the data package for the following ICVs:<br>• ICV 680-261629/9 analyzed 01/02/2013 @ 13:47, instrument MSK;<br>• ICV 680-261214/9 analyzed 12/21/2012 @ 13:52, instrument MSY; and<br>• ICV 680-261663/9 on 1/2/2013 @ 19:48, instrument MSY<br><br>The missing documentation was provided by the laboratory on 2/12/2013 (refer to **Attachment C**). | |
| 20. Was a LCS prepared for each batch and matrix? | ✓ | | | | |
| 21. Were LCS recoveries within lab control limits? If no, J-flag positive results when %R >Upper Control Limit (UCL) and J/R-flag results when %R <Lower Control Limit (LCL). | ✓ | | | | |
| 22. Were LCS/LCSD RPD within lab specifications? If no, J-flag positive results and UJ-flag non-detects | | | ✓ | LCS only | |
| 23. Was a MS/MSD pair extracted at the proper frequency (one per 20 samples per batch)? | | ✓ | | • Aqueous Prep Batch 261057: There was not sufficient sample volume available for MS/MSD preparation for the aqueous batch. An evaluation of accuracy and precision were based on the results of the LCS and LCSD analyses.<br>• Solid Prep Batch 261484: 680-85980-39 (CV0627A-CS), MS/MSD | |
| 24. Is the MS/MSD parent sample a project-specific sample? | ✓ | | | | |
| 25. Were MS/MSD recoveries within laboratory/project specifications? *Only QC results for project samples are evaluated.* | | ✓ | | CV0627A-CS (680-85980-39):<br>• 1-Methylnaphthalene MSD @ 28%R (36-130). Qualification of data is not required, because the MS | J |

## Data Validation Checklist (Continued)

| Review Questions | Yes | No | N/A | Samples (Analytes) Affected/Comments | Flag |
|---|---|---|---|---|---|
| • If the native sample concentration > 4x spiking level, then an evaluation of interference is not possible.<br>• If either MS or MSD recovery meets control limits, qualification of data is not warranted.<br>• MS and MSD %R<10: J and R Flag positive and ND results, respectively<br>• MS and MSD %R >10 and <LCL: J-Flag positive and UJ-flag non-detect results<br>• MS and MSD R% >UCL (or 140): J-Flag positive results | | | | %R (37) is within acceptance criteria.<br>• 2-Methylnaphthalene MS and MSD @ 34 and 20%R (42-130). J-Flag positive result<br>• Benzo(a)anthracene MS and MSD @ 31 and 30%R (39-157). J-Flag positive result.<br>• Benzo(a)pyrene MS and MSD @ 31 and 24%R (41-158). J-Flag positive result.<br>• Benzo(b)fluoranthene MS and MSD @ 12 and 9%R (35-152). J-Flag positive result<br>• Benzo(g,h,i)perylene MS and MSD @ 19 and 15%R (32-150). J-Flag positive result<br>• Benzo(k)fluoranthene MS and MSD @ 33 and 24%R (38-148). J-Flag positive result<br>• Chrysene MS and MSD @ 19 and 13%R (38-147). J-Flag positive result<br>• Fluoranthene MS and MSD @ 21 and 13%R (36-147). J-Flag positive result<br>• Indeno(1,2,3-cd)pyrene MS and MSD @ 20 and 17% (35-148). J-Flag positive result<br>• Naphthalene MS and MSD @ 19 and 4%R (33-130). J-Flag positive result<br>• Pyrene MS and MSD @ 25 and 20%R (38-145). J-Flag positive result<br>• Phenanthrene MS and MSD @ 24 and 14%R (40-135). J-Flag positive result | |
| 26. Were laboratory criteria met for precision during the MS/MSD analysis? *Only QC results for project samples are evaluated.*<br>• If the native sample concentration > 4x spiking level, then an evaluation of interference is not possible.<br>• If %RPD > UCL, J-flag positive result and UJ-flag non-detect result | ✓ | | | | |
| 27. Were surrogate recoveries within lab/project specifications?<br>• If %R for 1 Acid or BN surrogates <10, then J-flag positive and R-flag non-detect associated sample results<br>• If 2 or more Acid or BN %R >UCL, then J-flag positive results<br>• If 2 or more Acid or BN %R ≥10%, but <LCL, then J-flag positive results and UJ-flag non-detect results | | ✓ | | CV0294B-CS (680-85980-32): o-Terphenyl 28%R (36-131). J/UJ-Flag all results.<br><br>The remaining samples were analyzed at dilutions and had the surrogate o-terphenyl recovered at 0% (36-131). Qualification of data is not required, because the surrogate was not recovered due to sample dilution. | J/UJ |

## Data Validation Checklist (Continued)

| Review Questions | Yes | No | N/A | Samples (Analytes) Affected/Comments | Flag |
|---|---|---|---|---|---|
| • If 2 or more Acid or BN , with 1 %R >UCL and 1 %R ≥10%, but <LCL, then J-flag positive results and UJ-flag non-detect results | | | | | |
| 28. Were internal standard (IS) results within lab/project specifications?<br>• If IS area counts are less than 50% of the midpoint calibration standard, then J-flag positive and UJ-flag non-detect associated sample results<br>• If IS area counts are greater than 100% of the midpoint calibration standard, then J-flag positive results<br>• If extremely low area counts are reported or performance exhibits a major abrupt drop-off, then a severe loss of sensitivity is indicated, J-flag positive and R-flag non-detect results<br>• If retention time of sample's internal standard is not within 30 seconds of the associated calibration standard, R-flag associated data.<br>• The chromatographic profile for that sample must be examined to determine if any false positives or negatives exists. For shifts of large magnitude, the reviewer may consider partial or total rejection of the data for that sample fraction. Positive results need not be qualified as R, if mass spectral criteria are met. | ✓ | | | | |
| 29. Were lab comments included in report? | ✓ | | | Refer to **Attachment D** (Case Narrative) | |
| **Comments:** The data validation was conducted in accordance with the *Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1* (OTIE, October 2012). The data review process was modeled after the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Organic Methods Data Review* (EPA, October 1999) and *USEPA CLP NFG for Low Concentration Organic Methods Data Review* (EPA, June 2001). Sample results have been qualified based on the results of the data review process (**Attachment E**). Criteria for acceptability of data were based upon available site information, analytical method requirements, guidance documents, and professional judgment. | | | | | |

**DV Flag Definitions:**

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
R The sample results are unusable. The analyte may or may not be present in the sample.
U The analyte was analyzed for, but was not detected above the associated level; blank contamination may exist.
UJ The analyte was not detected above the limit, and the limit is approximate and may be inaccurate or imprecise.

**ATTACHMENT A**

**SAMPLE SUMMARY**

# Sample Summary

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-85980-1
SDG: 68085980-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 680-85980-9 | CV0228B-CS-SP | Solid | 12/18/12 14:50 | 12/20/12 10:27 |
| 680-85980-10 | CV0230A-CS-SP | Solid | 12/18/12 15:15 | 12/20/12 10:27 |
| 680-85980-26 | CV0424A-CS-SP | Solid | 12/18/12 12:45 | 12/20/12 10:27 |
| 680-85980-27 | CV0424B-CS-SP | Solid | 12/18/12 13:00 | 12/20/12 10:27 |
| 680-85980-28 | CV0235A-CS | Solid | 12/18/12 15:15 | 12/20/12 10:27 |
| 680-85980-29 | CV0235B-CS | Solid | 12/18/12 15:35 | 12/20/12 10:27 |
| 680-85980-32 | CV0294B-CS | Solid | 12/18/12 14:19 | 12/20/12 10:27 |
| 680-85980-33 | CV0294C-CS | Solid | 12/18/12 14:30 | 12/20/12 10:27 |
| 680-85980-37 | FM0016A-CS | Solid | 12/19/12 08:40 | 12/20/12 10:27 |
| 680-85980-38 | FM0016B-GS | Solid | 12/19/12 08:50 | 12/20/12 10:27 |
| 680-85980-39 | CV0627A-CS | Solid | 12/19/12 09:15 | 12/20/12 10:27 |
| 680-85980-41 | HP0190A-CS-SP | Solid | 12/19/12 09:50 | 12/20/12 10:27 |
| 680-85980-42 | HP0190B-CS-SP | Solid | 12/19/12 10:00 | 12/20/12 10:27 |
| 680-85980-43 | HP0190C-CS-SP | Solid | 12/19/12 10:15 | 12/20/12 10:27 |
| 680-85980-44 | CV0451A-CS-SP | Solid | 12/19/12 09:00 | 12/20/12 10:27 |
| 680-85980-45 | CV0451B-CS-SP | Solid | 12/19/12 09:15 | 12/20/12 10:27 |
| 680-85980-46 | 121912-RB-SIEVE | Water | 12/19/12 12:00 | 12/20/12 10:27 |

# ATTACHMENT B

# SAMPLE-SPECIFIC BLANK CONTAMINATION LEVELS

**Sample-Specific Blank Contamination Action Levels** **Attachment C**

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID:** | | | | | CV0228B-CS-SP | CV0230A-CS-SP | CV0424A-CS-SP | CV0235A-CS | CV0235B-CS | CV0294B-CS | CV0294C-CS | FM0016A-CS | FM0016B-GS | CV0627A-CS | HP0190A-CS-SP | HP0190B-CS-SP | HP0190C-CS-SP | CV0451B-CS-SP | CV0451B-CS-SP |
| **Lab ID:** | | | | | 85980-9 | 85980-10 | 85980-26 | 85980-28 | 85980-29 | 85980-32 | 85980-33 | 85980-37 | 85980-38 | 85980-39 | 85980-41 | 85980-42 | 85980-43 | 85980-44 | 85980-45 |
| **%S:** | | | | | 71.9 | 67.5 | 75.7 | 73.3 | 73.6 | 63.7 | 73.7 | 70.2 | 67.1 | 72.2 | 76.1 | 73.9 | 76.9 | 76.4 | 76.0 |
| **DF:** | | | | | 10 | 10 | 10 | 10 | 10 | 1 | 1 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| **Parameter** | **RL, ug/L** | **RB, ug/L** | **Maximum Amount Detected[1], µg/L** | **Action Level[2] µg/kg** | **Sample-Specific Blank Contamination Action Levels, µg/kg** | | | | | | | | | | | | | | |
| **Chrysene** | 0.20 | 0.11 | 0.11 | 18.15 | 252 | 269 | 240 | 248 | 247 | 28 | 25 | 259 | 270 | 251 | 239 | 246 | 236 | 238 | 239 |
| **Reported Sample Result:** | | | | | 570 | 1100 | 300 | **130** | 480 | 37 | **17** | **200** | 330 | 340 | **110** | **62** | **170** | **130** | **140** |
| **Reporting Limit, µg/kg:** | | | | | 92 | 99 | 88 | 91 | 90 | 10 | 9 | 95 | 99 | 93 | 88 | 91 | 87 | 88 | 88 |
| **Blank contamination action:** | | | | | None[3] | None[3] | None[3] | U | None[3] | None[3] | U | U | None[3] | None[3] | U | U | U | U | U |

MB - Method blank

RB - Rinsate blank

RL - Reporting limit

[1] Maximum amount detected in among all blanks

[2] Maximum amount detected in blanks multiplied by a factor of 10 for common blank contaminants (5 for all others) and soil conversion factorof 33 (µg/L to µg/Kg)

[3] Qualification of data is not warranted, because the sample concentration is greater than the sample-specific BCAL

**Action:** Sample results less than the sample-specific BCAL have been qualified due to the presence of blank contamination. The sample result has been U-flagged, and reporting limit elevated to the amount found in the sample.

**ATTACHMENT C**

**DATA PACKAGE ADDENDUM**

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Savannah  Job No.: 680-85980-1

SDG No.: 68085980-1

Lab File ID: ka0205t.d  DFTPP Injection Date: 01/02/2013

Instrument ID: MSK  DFTPP Injection Time: 10:48

Analysis Batch No.: 261629

| M/E | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE | |
|---|---|---|---|
| 51 | 10.0 - 80.0 % of mass 442 | 15.8 | |
| 68 | Less than 2.0 % of mass 69 | 0.0 | (0.0)1 |
| 69 | Mass 69 relative abundance | 15.2 | |
| 70 | Less than 2.0 % of mass 69 | 0.0 | (0.3)1 |
| 127 | 10.0 - 80.0 % of mass 442 | 29.1 | |
| 197 | Less than 2.0 % of mass 198 | 0.0 | (0.0)2 |
| 198 | Greater than 50.0 % of mass 442 | 61.5 | |
| 199 | 5.0 - 9.0 % of mass 198 | 4.0 | (6.5)2 |
| 275 | 10.0 - 60.0 % of mass 442 | 16.8 | |
| 365 | Greater than 1.0 % of mass 442 | 2.4 | |
| 441 | Present but less than mass 443 | 16.4 | |
| 442 | Base Peak, 100% relative abundance | 100.0 | |
| 443 | 15.0 - 24.0 % of mass 442 | 19.9 | |

1-Value is % mass 69  2-Value is % mass 198

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

| CLIENT SAMPLE ID | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| | IC 680-261629/2 | ka0206q.d | 01/02/2013 | 11:04 |
| | IC 680-261629/3 | ka0207q.d | 01/02/2013 | 11:28 |
| | IC 680-261629/4 | ka0208q.d | 01/02/2013 | 11:51 |
| | IC 680-261629/5 | ka0209q.d | 01/02/2013 | 12:15 |
| | IC 680-261629/6 | ka0210q.d | 01/02/2013 | 12:38 |
| | IC 680-261629/7 | ka0211q.d | 01/02/2013 | 13:01 |
| | ICIS 680-261629/8 | ka0212q.d | 01/02/2013 | 13:24 |
| | ICV 680-261629/9 | ka0213q.d | 01/02/2013 | 13:47 |
| | MB 680-261484/17-A | ka02115.d | 01/02/2013 | 14:34 |
| | LCS 680-261484/18-A | ka02116.d | 01/02/2013 | 14:57 |
| HP0190B-CS-SP | 680-85980-42 | ka0217.d | 01/02/2013 | 15:20 |
| HP0190C-CS-SP | 680-85980-43 | ka0218.d | 01/02/2013 | 15:44 |
| CV0451A-CS-SP | 680-85980-44 | ka0219.d | 01/02/2013 | 16:07 |
| CV0424A-CS-SP | 680-85980-26 | ka0220.d | 01/02/2013 | 16:31 |
| CV0424B-CS-SP | 680-85980-27 | ka0221.d | 01/02/2013 | 16:54 |
| CV0235A-CS | 680-85980-28 | ka0222.d | 01/02/2013 | 17:18 |
| CV0235B-CS | 680-85980-29 | ka0223.d | 01/02/2013 | 17:41 |
| CV0627A-CS MS | 680-85980-39 MS | ka0224.d | 01/02/2013 | 18:05 |
| CV0627A-CS MSD | 680-85980-39 MSD | ka0225.d | 01/02/2013 | 18:28 |
| CV0627A-CS | 680-85980-39 | ka0226.d | 01/02/2013 | 18:52 |
| FM0016A-CS | 680-85980-37 | ka0227.d | 01/02/2013 | 19:16 |
| CV0451B-CS-SP | 680-85980-45 | ka0228.d | 01/02/2013 | 19:40 |
| CV0228B-CS-SP | 680-85980-9 | ka0229.d | 01/02/2013 | 20:04 |

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Savannah  Job No.: 680-85980-1

SDG No.: 68085980-1

Lab File ID: yl2105t.d  DFTPP Injection Date: 12/21/2012

Instrument ID: MSY  DFTPP Injection Time: 10:58

Analysis Batch No.: 261214

| M/E | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE | |
|---|---|---|---|
| 51 | 10.0 - 80.0 % of mass 442 | 19.5 | |
| 68 | Less than 2.0 % of mass 69 | 0.4 | (2.0)1 |
| 69 | Mass 69 relative abundance | 20.6 | |
| 70 | Less than 2.0 % of mass 69 | 0.3 | (1.3)1 |
| 127 | 10.0 - 80.0 % of mass 442 | 31.6 | |
| 197 | Less than 2.0 % of mass 198 | 0.8 | (1.0)2 |
| 198 | Greater than 50.0 % of mass 442 | 83.9 | |
| 199 | 5.0 - 9.0 % of mass 198 | 5.3 | (6.3)2 |
| 275 | 10.0 - 60.0 % of mass 442 | 22.2 | |
| 365 | Greater than 1.0 % of mass 442 | 3.0 | |
| 441 | Present but less than mass 443 | 14.4 | |
| 442 | Base Peak, 100% relative abundance | 100.0 | |
| 443 | 15.0 - 24.0 % of mass 442 | 19.6 | |

1-Value is % mass 69  2-Value is % mass 198

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

| CLIENT SAMPLE ID | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| | IC 680-261214/2 | yl2106q.d | 12/21/2012 | 11:14 |
| | IC 680-261214/3 | yl2107q.d | 12/21/2012 | 11:37 |
| | IC 680-261214/4 | yl2108q.d | 12/21/2012 | 11:59 |
| | IC 680-261214/5 | yl2109q.d | 12/21/2012 | 12:22 |
| | IC 680-261214/6 | yl2110q.d | 12/21/2012 | 12:44 |
| | IC 680-261214/7 | yl2111q.d | 12/21/2012 | 13:07 |
| | ICIS 680-261214/8 | yl2112q.d | 12/21/2012 | 13:30 |
| | ICV 680-261214/9 | yl2113q.d | 12/21/2012 | 13:52 |

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Savannah Job No.: 680-85980-1

SDG No.: 68085980-1

Lab File ID: yl2801t.d DFTPP Injection Date: 12/28/2012

Instrument ID: MSY DFTPP Injection Time: 10:20

Analysis Batch No.: 261362

| M/E | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE | |
|---|---|---|---|
| 51 | 10.0 - 80.0 % of mass 442 | 28.7 | |
| 68 | Less than 2.0 % of mass 69 | 0.3 | (0.9)1 |
| 69 | Mass 69 relative abundance | 32.2 | |
| 70 | Less than 2.0 % of mass 69 | 0.0 | (0.0)1 |
| 127 | 10.0 - 80.0 % of mass 442 | 49.2 | |
| 197 | Less than 2.0 % of mass 198 | 1.0 | (0.9)2 |
| 198 | Greater than 50.0 % of mass 442 | 111.3 | |
| 199 | 5.0 - 9.0 % of mass 198 | 7.2 | (6.5)2 |
| 275 | 10.0 - 60.0 % of mass 442 | 26.7 | |
| 365 | Greater than 1.0 % of mass 442 | 3.3 | |
| 441 | Present but less than mass 443 | 14.4 | |
| 442 | Base Peak, 100% relative abundance | 100.0 | |
| 443 | 15.0 - 24.0 % of mass 442 | 19.2 | |

1-Value is % mass 69 2-Value is % mass 198

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

| CLIENT SAMPLE ID | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| | CCVIS 680-261362/2 | yl2802q.d | 12/28/2012 | 10:37 |
| | MB 680-261057/10-A | yl2811z.d | 12/28/2012 | 14:50 |
| | LCS 680-261057/11-A | yl2812.d | 12/28/2012 | 15:12 |
| | LCSD 680-261057/12-A | yl2813.d | 12/28/2012 | 15:34 |
| 121912-RB-SIEVE | 680-85980-46 | yl2817.d | 12/28/2012 | 17:05 |

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Savannah  Job No.: 680-85980-1

SDG No.: 68085980-1

Lab File ID: ya0201tzz.d  DFTPP Injection Date: 01/02/2013

Instrument ID: MSY  DFTPP Injection Time: 16:44

Analysis Batch No.: 261663

| M/E | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE | |
|---|---|---|---|
| 51 | 10.0 - 80.0 % of mass 442 | 26.0 | |
| 68 | Less than 2.0 % of mass 69 | 0.3 | (1.2)1 |
| 69 | Mass 69 relative abundance | 20.5 | |
| 70 | Less than 2.0 % of mass 69 | 0.1 | (0.4)1 |
| 127 | 10.0 - 80.0 % of mass 442 | 36.8 | |
| 197 | Less than 2.0 % of mass 198 | 0.7 | (0.9)2 |
| 198 | Greater than 50.0 % of mass 442 | 74.7 | |
| 199 | 5.0 - 9.0 % of mass 198 | 5.0 | (6.7)2 |
| 275 | 10.0 - 60.0 % of mass 442 | 17.5 | |
| 365 | Greater than 1.0 % of mass 442 | 2.4 | |
| 441 | Present but less than mass 443 | 14.5 | |
| 442 | Base Peak, 100% relative abundance | 100.0 | |
| 443 | 15.0 - 24.0 % of mass 442 | 19.6 | |

1-Value is % mass 69  2-Value is % mass 198

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

| CLIENT SAMPLE ID | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|
| | IC 680-261663/2 | ya0202q.d | 01/02/2013 | 17:06 |
| | IC 680-261663/3 | ya0203q.d | 01/02/2013 | 17:29 |
| | IC 680-261663/4 | ya0204q.d | 01/02/2013 | 17:53 |
| | IC 680-261663/5 | ya0205q.d | 01/02/2013 | 18:16 |
| | IC 680-261663/6 | ya0206q.d | 01/02/2013 | 18:39 |
| | IC 680-261663/7 | ya0207q.d | 01/02/2013 | 19:02 |
| | ICIS 680-261663/8 | ya0208q.d | 01/02/2013 | 19:25 |
| | ICV 680-261663/9 | ya0209q.d | 01/02/2013 | 19:48 |
| CV0230A-CS-SP | 680-85980-10 | ya0211.d | 01/02/2013 | 20:34 |
| FM0016B-GS | 680-85980-38 | ya0212.d | 01/02/2013 | 20:57 |
| HP0190A-CS-SP | 680-85980-41 | ya0213.d | 01/02/2013 | 21:20 |
| CV0294B-CS | 680-85980-32 | ya0214.d | 01/02/2013 | 21:43 |
| CV0294C-CS | 680-85980-33 | ya0215.d | 01/02/2013 | 22:06 |

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Savannah  Job No.: 680-85980-1

SDG No.: 68085980-1

Lab Sample ID: ICV 680-261629/9  Calibration Date: 01/02/2013 13:47

Instrument ID: MSK  Calib Start Date: 01/02/2013 11:04

GC Column: RXi- 5Sil MS  ID: 0.25(mm)  Calib End Date: 01/02/2013 13:24

Lab File ID: ka0213q.d  Conc. Units: ug/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | Ave | 1.178 | 1.101 | | 6.70 | 2.00 | -6.6 | 20.0 |
| 2-Methylnaphthalene | Ave | 0.7325 | 0.7203 | | 6.70 | 2.00 | -1.7 | 20.0 |
| 1-Methylnaphthalene | Ave | 0.7425 | 0.6835 | | 6.70 | 2.00 | -8.0 | 20.0 |
| Acenaphthylene | Ave | 2.073 | 1.869 | | 6.70 | 2.00 | -9.8 | 20.0 |
| Acenaphthene | Ave | 1.183 | 1.104 | | 6.70 | 2.00 | -6.6 | 20.0 |
| Fluorene | Ave | 1.382 | 1.300 | | 6.70 | 2.00 | -6.0 | 20.0 |
| Phenanthrene | Ave | 1.262 | 1.167 | | 6.70 | 2.00 | -7.6 | 20.0 |
| Anthracene | Ave | 1.197 | 1.134 | | 6.70 | 2.00 | -5.2 | 20.0 |
| Fluoranthene | Ave | 1.272 | 1.151 | | 6.70 | 2.00 | -9.5 | 20.0 |
| Pyrene | Ave | 1.705 | 1.597 | | 6.70 | 2.00 | -6.3 | 20.0 |
| Benzo[a]anthracene | Ave | 1.309 | 1.216 | | 6.70 | 2.00 | -7.1 | 20.0 |
| Chrysene | Ave | 1.288 | 1.152 | | 6.70 | 2.00 | -10.6 | 20.0 |
| Benzo[b]fluoranthene | Ave | 1.486 | 1.255 | | 6.70 | 2.00 | -15.6 | 20.0 |
| Benzo[k]fluoranthene | Ave | 1.439 | 1.389 | | 6.70 | 2.00 | -3.5 | 20.0 |
| Benzo[a]pyrene | Ave | 1.136 | 1.098 | | 1.93 | 2.00 | -3.4 | 20.0 |
| Indeno[1,2,3-cd]pyrene | Ave | 1.033 | 0.9455 | | 6.70 | 2.00 | -8.4 | 20.0 |
| Dibenz(a,h)anthracene | Ave | 1.022 | 0.9356 | | 6.70 | 2.00 | -8.4 | 20.0 |
| Benzo[g,h,i]perylene | Ave | 1.014 | 0.9192 | | 6.70 | 2.00 | -9.3 | 20.0 |
| o-Terphenyl | Ave | 1.038 | 0.9754 | | 1.88 | 2.00 | -6.0 | 20.0 |

TESTAMERICA SAVANNAH

Semivolatile REPORT SW-846 Method 8270C

Data file : /chem/SM/MSK5973.i/1k010213.b/ka0213q.d
Lab Smp Id: ICV-289487; LLPAH
Inj Date : 02-JAN-2013 13:47
Operator : LEG Inst ID: MSK5973.i
Smp Info : ICV-289487; LLPAH
Misc Info :
Comment : analysis of PAHs
Method : /chem/SM/MSK5973.i/1k010213.b/k-b8270CLLPAH-m.m
Meth Date : 02-Jan-2013 13:57 chemist Quant Type: ISTD
Cal Date : 02-JAN-2013 13:24 Cal File: ka0212q.d
Als bottle: 9 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TL2007.sub
Target Version: 3.50
Processing Host: savchem1

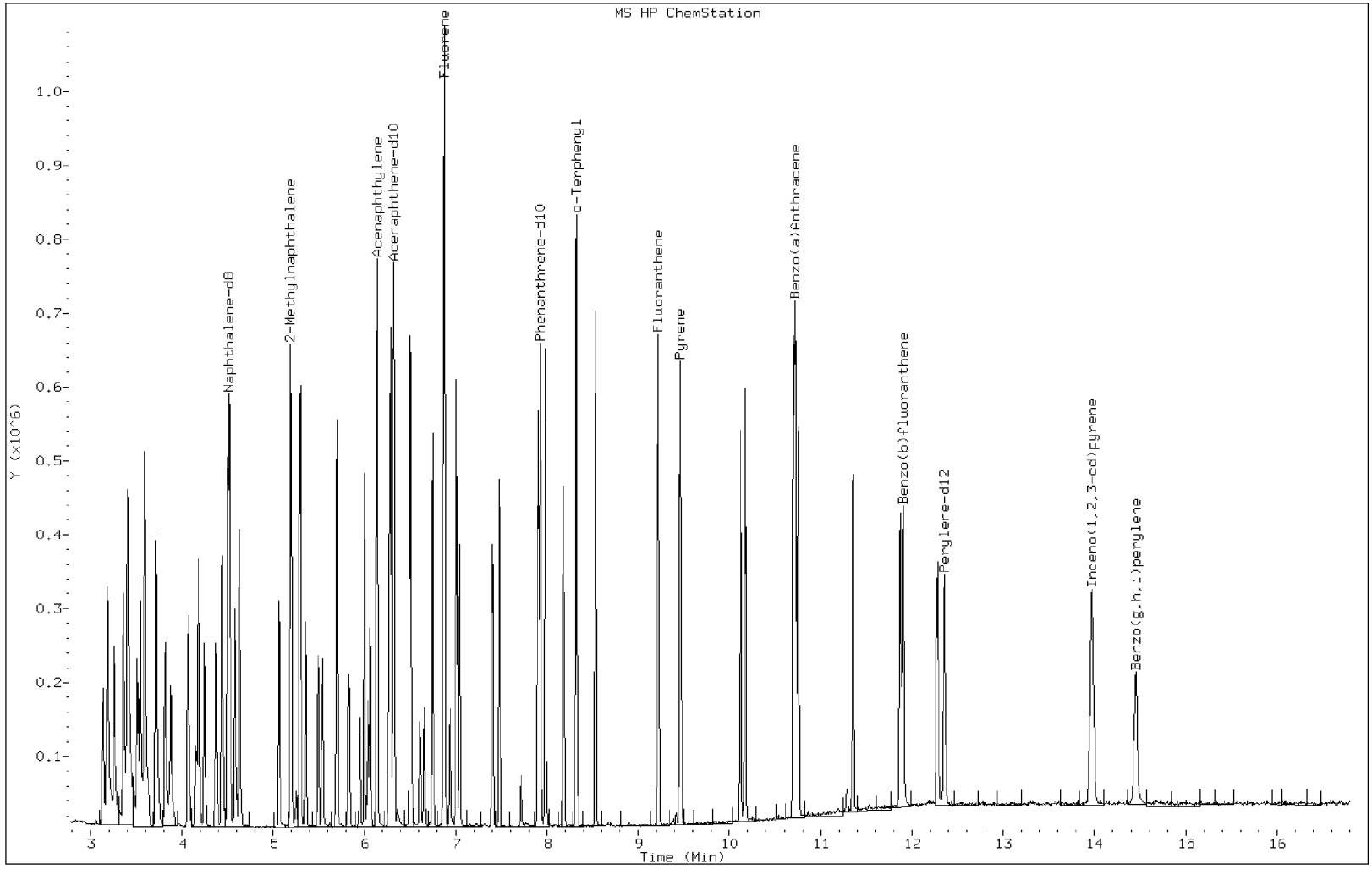
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT (ug/ml) | ON-COL (ug/ml) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Naphthalene-d8 | 136 | 4.501 | 4.501 | (1.000) | 337065 | 2.00000 | |
| 2 | Naphthalene | 128 | 4.524 | 4.524 | (1.005) | 371183 | 2.00000 | 1.86 |
| 3 | 2-Methylnaphthalene | 142 | 5.194 | 5.194 | (1.154) | 242781 | 2.00000 | 1.96 |
| 4 | 1-Methylnaphthalene | 142 | 5.300 | 5.300 | (1.178) | 230375 | 2.00000 | 1.84 |
| 6 | Acenaphthylene | 152 | 6.140 | 6.140 | (0.977) | 350828 | 2.00000 | 1.80 |
| * 5 | Acenaphthene-d10 | 164 | 6.287 | 6.287 | (1.000) | 187680 | 2.00000 | |
| 7 | Acenaphthene | 154 | 6.322 | 6.322 | (1.006) | 207277 | 2.00000 | 1.86 |
| 8 | Fluorene | 166 | 6.875 | 6.875 | (1.093) | 243927 | 2.00000 | 1.88 |
| * 9 | Phenanthrene-d10 | 188 | 7.903 | 7.903 | (1.000) | 267433 | 2.00000 | |
| 10 | Phenanthrene | 178 | 7.932 | 7.932 | (1.004) | 312012 | 2.00000 | 1.84 |
| 11 | Anthracene | 178 | 7.985 | 7.985 | (1.010) | 303382 | 2.00000 | 1.89 |
| $ 15 | o-Terphenyl | 230 | 8.326 | 8.326 | (0.776) | 191848 | 2.00000 | 1.88 |
| 12 | Fluoranthene | 202 | 9.219 | 9.219 | (1.167) | 307890 | 2.00000 | 1.81 |
| 14 | Pyrene | 202 | 9.466 | 9.466 | (0.882) | 314104 | 2.00000 | 1.87 |
| 16 | Benzo(a)Anthracene | 228 | 10.717 | 10.717 | (0.999) | 239172 | 2.00000 | 1.85 |
| * 13 | Chrysene-d12 | 240 | 10.729 | 10.729 | (1.000) | 196696 | 2.00000 | |
| 17 | Chrysene | 228 | 10.758 | 10.758 | (1.003) | 226566 | 2.00000 | 1.78 |
| 19 | Benzo(b)fluoranthene | 252 | 11.875 | 11.875 | (0.961) | 207015 | 2.00000 | 1.68 |
| 20 | Benzo(k)fluoranthene | 252 | 11.904 | 11.904 | (0.963) | 229132 | 2.00000 | 1.93 |
| 21 | Benzo(a)pyrene | 252 | 12.280 | 12.280 | (0.994) | 181130 | 2.00000 | 1.93 |
| * 18 | Perylene-d12 | 264 | 12.356 | 12.356 | (1.000) | 165002 | 2.00000 | |
| 22 | Indeno(1,2,3-cd)pyrene | 276 | 13.960 | 13.960 | (1.301) | 185969 | 2.00000 | 1.83 |
| 23 | Dibenzo(a,h)anthracene | 278 | 13.984 | 13.984 | (1.132) | 154376 | 2.00000 | 1.83 |
| 24 | Benzo(g,h,i)perylene | 276 | 14.454 | 14.454 | (1.170) | 151671 | 2.00000 | 1.81 |

Data File: ka0213q.d

Date: 02-JAN-2013 13:47

Client ID: Instrument: MSK5973.i

Sample Info: ICV-289487; LLPAH Operator: LEG



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Savannah  Job No.: 680-85980-1

SDG No.: 68085980-1

Lab Sample ID: ICV 680-261214/9  Calibration Date: 12/21/2012 13:52

Instrument ID: MSY  Calib Start Date: 12/21/2012 11:14

GC Column: HP-5MS  ID: 0.25(mm)  Calib End Date: 12/21/2012 13:30

Lab File ID: yl2113q.d  Conc. Units: ug/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | Ave | 1.179 | 1.128 | | 1.91 | 2.00 | -4.3 | 20.0 |
| 2-Methylnaphthalene | Ave | 0.7356 | 0.7321 | | 1.99 | 2.00 | -0.5 | 20.0 |
| 1-Methylnaphthalene | Ave | 0.7741 | 0.7035 | | 1.82 | 2.00 | -9.1 | 20.0 |
| Acenaphthylene | Ave | 2.067 | 1.863 | | 1.80 | 2.00 | -9.8 | 20.0 |
| Acenaphthene | Ave | 1.225 | 1.106 | | 1.80 | 2.00 | -9.8 | 20.0 |
| Fluorene | Ave | 1.374 | 1.321 | | 1.92 | 2.00 | -3.8 | 20.0 |
| Phenanthrene | Ave | 1.232 | 1.083 | | 1.76 | 2.00 | -12.1 | 20.0 |
| Anthracene | Ave | 1.178 | 1.038 | | 1.76 | 2.00 | -11.9 | 20.0 |
| Fluoranthene | Ave | 1.436 | 1.224 | | 1.70 | 2.00 | -14.8 | 20.0 |
| Pyrene | Ave | 1.815 | 1.592 | | 1.75 | 2.00 | -12.3 | 20.0 |
| Benzo[a]anthracene | Ave | 1.419 | 1.233 | | 1.74 | 2.00 | -13.1 | 20.0 |
| Chrysene | LinF | 1.442 | 1.143 | | 1.81 | 2.00 | -9.6 | 20.0 |
| Benzo[b]fluoranthene | LinF | 1.680 | 1.414 | | 1.93 | 2.00 | -3.4 | 20.0 |
| Benzo[k]fluoranthene | LinF | 1.641 | 1.559 | | 2.09 | 2.00 | 4.4 | 20.0 |
| Benzo[a]pyrene | LinF | 1.337 | 1.225 | | 2.03 | 2.00 | 1.5 | 20.0 |
| Indeno[1,2,3-cd]pyrene | LinF | 1.311 | 1.093 | | 2.01 | 2.00 | 0.6 | 20.0 |
| Dibenz(a,h)anthracene | LinF | 1.207 | 1.043 | | 2.06 | 2.00 | 2.9 | 20.0 |
| Benzo[g,h,i]perylene | LinF | 1.242 | 1.028 | | 1.96 | 2.00 | -2.1 | 20.0 |
| o-Terphenyl | Ave | 1.080 | 0.9695 | | 1.80 | 2.00 | -10.2 | 20.0 |

TESTAMERICA SAVANNAH

Semivolatile REPORT SW-846 Method 8270C

Data file : /chem/SM/MSY5975.i/1y122112.b/yl2113q.d
Lab Smp Id: ICV-2898487; LLPAH
Inj Date : 21-DEC-2012 13:52
Operator : VHB Inst ID: MSY5975.i
Smp Info : ICV-2898487; LLPAH
Misc Info :
Comment : analysis of PAHs
Method : /chem/SM/MSY5975.i/1y122112.b/Y-b8270CLLPAH-m.m
Meth Date : 21-Dec-2012 14:11 chemist Quant Type: ISTD
Cal Date : 21-DEC-2012 13:30 Cal File: yl2112q.d
Als bottle: 10 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TL2007.sub
Target Version: 3.50
Processing Host: savchem1

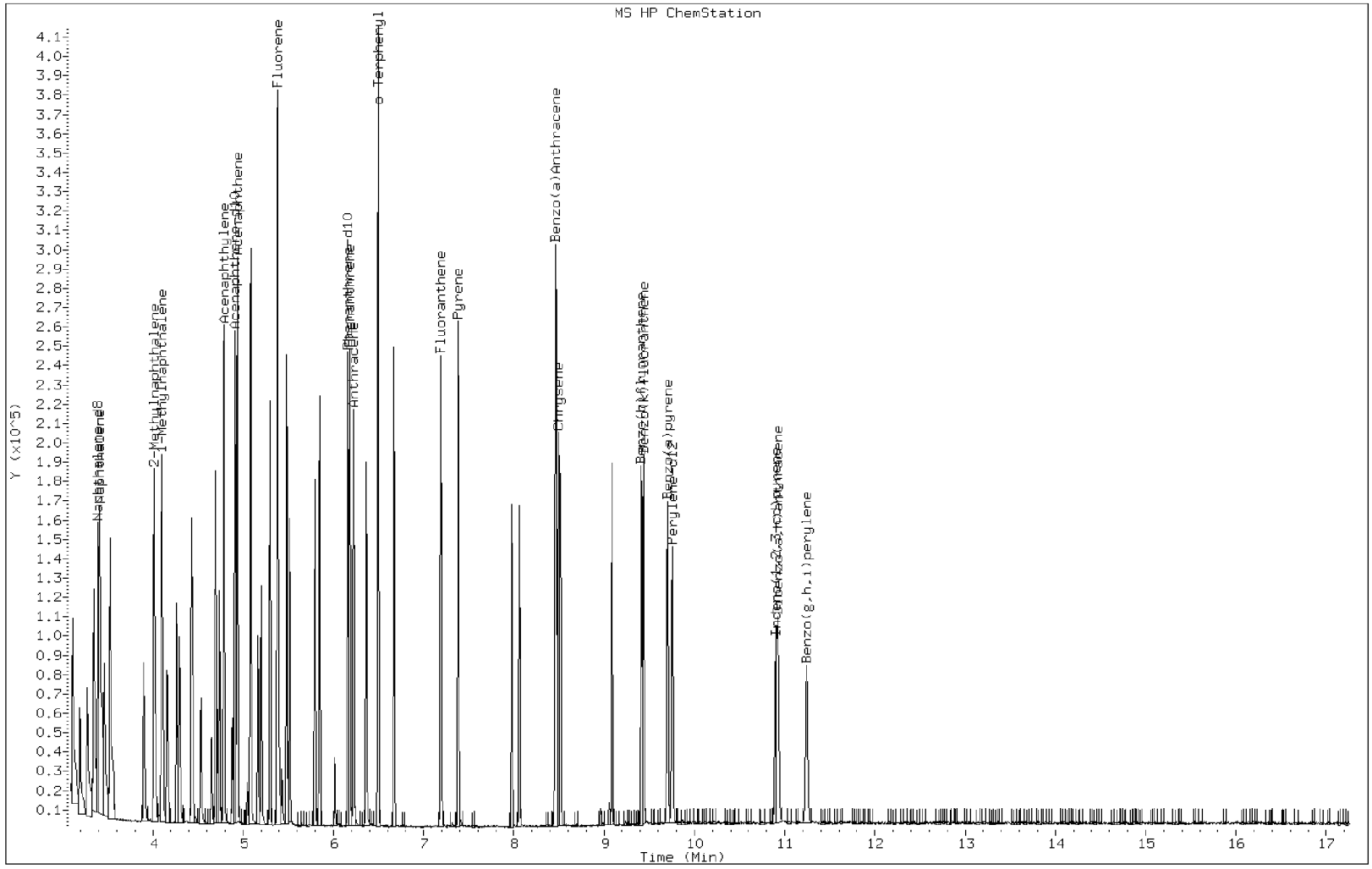
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT (ug/ml) | ON-COL (ug/ml) |
|---|---|---|---|---|---|---|---|---|
| * | 1 Naphthalene-d8 | 136 | 3.392 | 3.392 | (1.000) | 98350 | 2.00000 | |
| | 2 Naphthalene | 128 | 3.413 | 3.413 | (1.006) | 110904 | 2.00000 | 1.91 |
| | 3 2-Methylnaphthalene | 142 | 4.012 | 4.012 | (1.183) | 72000 | 2.00000 | 1.99 |
| | 4 1-Methylnaphthalene | 142 | 4.098 | 4.098 | (1.208) | 69187 | 2.00000 | 1.81 |
| | 6 Acenaphthylene | 152 | 4.788 | 4.788 | (0.975) | 109224 | 2.00000 | 1.80 |
| * | 5 Acenaphthene-d10 | 164 | 4.911 | 4.911 | (1.000) | 58614 | 2.00000 | |
| | 7 Acenaphthene | 154 | 4.938 | 4.938 | (1.005) | 64806 | 2.00000 | 1.80 |
| | 8 Fluorene | 166 | 5.376 | 5.376 | (1.095) | 77458 | 2.00000 | 1.92 |
| * | 9 Phenanthrene-d10 | 188 | 6.162 | 6.162 | (1.000) | 89447 | 2.00000 | |
| | 10 Phenanthrene | 178 | 6.178 | 6.178 | (1.003) | 96849 | 2.00000 | 1.75 |
| | 11 Anthracene | 178 | 6.227 | 6.227 | (1.010) | 92834 | 2.00000 | 1.76 |
| $ | 15 o-Terphenyl | 230 | 6.494 | 6.494 | (0.766) | 68237 | 2.00000 | 1.79 |
| | 12 Fluoranthene | 202 | 7.189 | 7.189 | (1.167) | 109450 | 2.00000 | 1.70 |
| | 14 Pyrene | 202 | 7.382 | 7.382 | (0.871) | 112023 | 2.00000 | 1.75 |
| | 16 Benzo(a)Anthracene | 228 | 8.462 | 8.462 | (0.999) | 86809 | 2.00000 | 1.73 |
| * | 13 Chrysene-d12 | 240 | 8.473 | 8.473 | (1.000) | 70382 | 2.00000 | |
| | 17 Chrysene | 228 | 8.494 | 8.494 | (1.003) | 80440 | 2.00000 | 1.80 |
| | 19 Benzo(b)fluoranthene | 252 | 9.409 | 9.409 | (0.964) | 89864 | 2.00000 | 1.93 |
| | 20 Benzo(k)fluoranthene | 252 | 9.436 | 9.436 | (0.967) | 99083 | 2.00000 | 2.08 |
| | 21 Benzo(a)pyrene | 252 | 9.703 | 9.703 | (0.995) | 77876 | 2.00000 | 2.03 |
| * | 18 Perylene-d12 | 264 | 9.757 | 9.757 | (1.000) | 63566 | 2.00000 | |
| | 22 Indeno(1,2,3-cd)pyrene | 276 | 10.901 | 10.901 | (1.287) | 76902 | 2.00000 | 2.01 |
| | 23 Dibenzo(a,h)anthracene | 278 | 10.928 | 10.928 | (1.120) | 66318 | 2.00000 | 2.05 |
| | 24 Benzo(g,h,i)perylene | 276 | 11.244 | 11.244 | (1.152) | 65321 | 2.00000 | 1.95 |

Data File: yl2113q.d

Date: 21-DEC-2012 13:52

Client ID: Instrument: MSY5975.i

Sample Info: ICV-2898487; LLPAH Operator: VHB



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Savannah  Job No.: 680-85980-1

SDG No.: 68085980-1

Lab Sample ID: ICV 680-261663/9  Calibration Date: 01/02/2013 19:48

Instrument ID: MSY  Calib Start Date: 01/02/2013 17:06

GC Column: HP-5MS  ID: 0.25(mm)  Calib End Date: 01/02/2013 19:25

Lab File ID: ya0209q.d  Conc. Units: ug/mL

| ANALYTE | CURVE TYPE | AVE RRF | RRF | MIN RRF | CALC AMOUNT | SPIKE AMOUNT | %D | MAX %D |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | Ave | 1.175 | 1.110 | | 6.70 | 2.00 | -5.5 | 20.0 |
| 2-Methylnaphthalene | Ave | 0.7281 | 0.6878 | | 6.70 | 2.00 | -5.5 | 20.0 |
| 1-Methylnaphthalene | Ave | 0.7419 | 0.6539 | | 6.70 | 2.00 | -11.9 | 20.0 |
| Acenaphthylene | Ave | 1.987 | 1.779 | | 6.70 | 2.00 | -10.5 | 20.0 |
| Acenaphthene | Ave | 1.219 | 1.123 | | 6.70 | 2.00 | -7.9 | 20.0 |
| Fluorene | Ave | 1.340 | 1.236 | | 6.70 | 2.00 | -7.8 | 20.0 |
| Phenanthrene | Ave | 1.314 | 1.225 | | 6.70 | 2.00 | -6.8 | 20.0 |
| Anthracene | Ave | 1.248 | 1.147 | | 6.70 | 2.00 | -8.1 | 20.0 |
| Fluoranthene | Ave | 1.214 | 1.103 | | 6.70 | 2.00 | -9.2 | 20.0 |
| Pyrene | Ave | 1.740 | 1.502 | | 6.70 | 2.00 | -13.7 | 20.0 |
| Benzo[a]anthracene | LinF | 1.474 | 1.235 | | 6.70 | 2.00 | -5.3 | 20.0 |
| Chrysene | LinF | 1.526 | 1.232 | | 6.70 | 2.00 | -4.9 | 20.0 |
| Benzo[b]fluoranthene | Ave | 1.513 | 1.353 | | 6.70 | 2.00 | -10.6 | 20.0 |
| Benzo[k]fluoranthene | LinF | 1.580 | 1.289 | | 6.70 | 2.00 | -12.7 | 20.0 |
| Benzo[a]pyrene | Ave | 1.181 | 1.088 | | 1.84 | 2.00 | -7.9 | 20.0 |
| Indeno[1,2,3-cd]pyrene | Ave | 1.205 | 1.112 | | 6.70 | 2.00 | -7.7 | 20.0 |
| Dibenz(a,h)anthracene | Ave | 1.053 | 0.9589 | | 6.70 | 2.00 | -8.9 | 20.0 |
| Benzo[g,h,i]perylene | Ave | 1.123 | 1.007 | | 6.70 | 2.00 | -10.3 | 20.0 |
| o-Terphenyl | Ave | 1.033 | 0.9397 | | 1.82 | 2.00 | -9.1 | 20.0 |

TESTAMERICA SAVANNAH

Semivolatile REPORT SW-846 Method 8270C

Data file : /chem/SM/MSY5975.i/2y010213.b/ya0209q.d
Lab Smp Id: ICV-2898487; LLPAH
Inj Date : 02-JAN-2013 19:48
Operator : VHB Inst ID: MSY5975.i
Smp Info : ICV-2898487; LLPAH
Misc Info :
Comment : analysis of PAHs
Method : /chem/SM/MSY5975.i/2y010213.b/Y-b8270CLLPAH-m.m
Meth Date : 03-Jan-2013 07:06 chemist Quant Type: ISTD
Cal Date : 02-JAN-2013 19:25 Cal File: ya0208q.d
Als bottle: 9 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TL2007.sub
Target Version: 3.50
Processing Host: savchem1

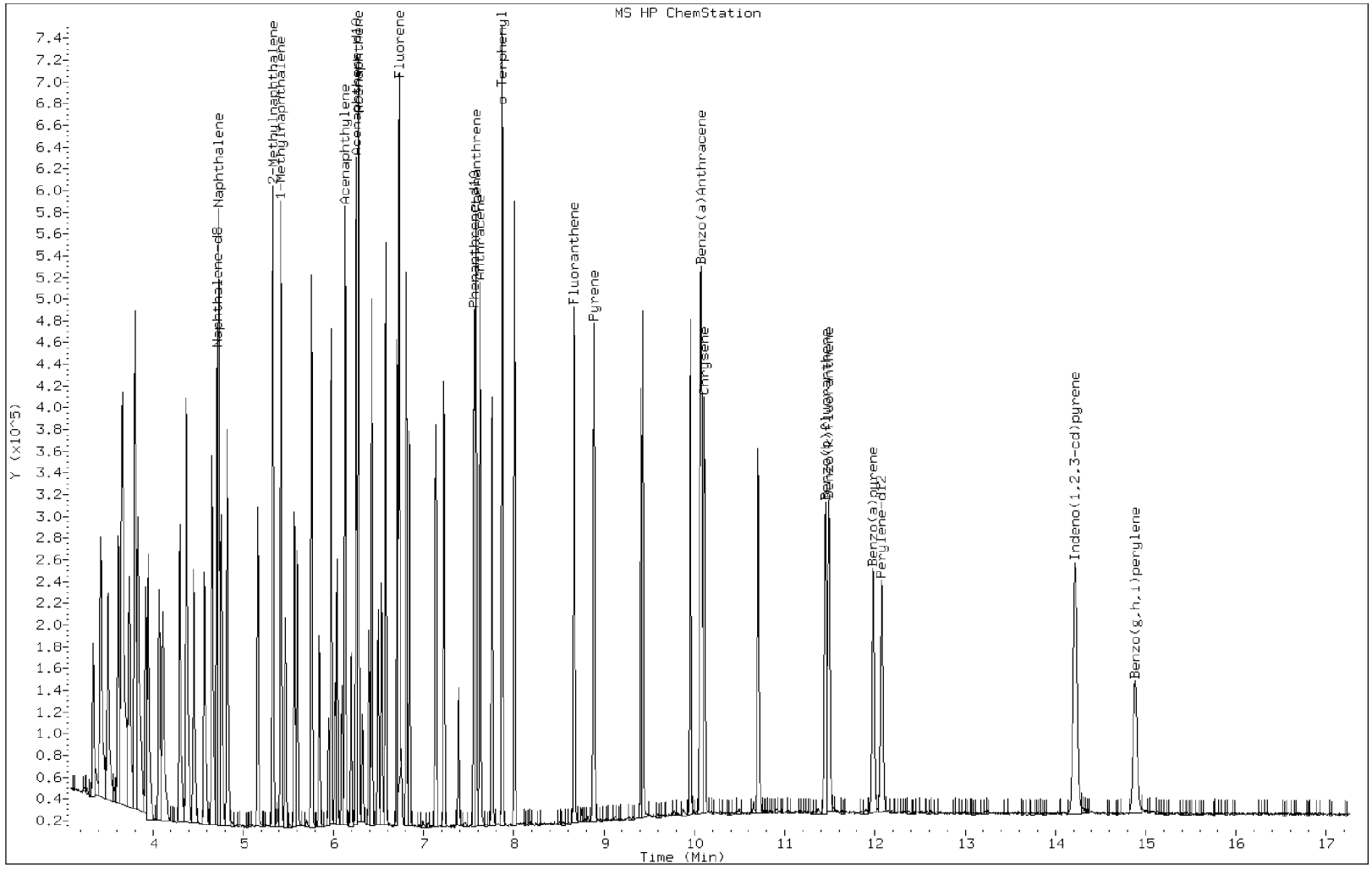
| | Compounds | QUANT SIG MASS | RT | EXP RT | REL RT | RESPONSE | AMOUNTS CAL-AMT (ug/ml) | ON-COL (ug/ml) |
|---|---|---|---|---|---|---|---|---|
| * 1 | Naphthalene-d8 | 136 | 4.713 | 4.713 | (1.000) | 297910 | 2.00000 | |
| 2 | Naphthalene | 128 | 4.729 | 4.729 | (1.003) | 330782 | 2.00000 | 1.88 |
| 3 | 2-Methylnaphthalene | 142 | 5.328 | 5.328 | (1.131) | 204887 | 2.00000 | 1.88 |
| 4 | 1-Methylnaphthalene | 142 | 5.419 | 5.419 | (1.150) | 194812 | 2.00000 | 1.76 |
| 6 | Acenaphthylene | 152 | 6.130 | 6.130 | (0.980) | 282872 | 2.00000 | 1.78 |
| * 5 | Acenaphthene-d10 | 164 | 6.253 | 6.253 | (1.000) | 159045 | 2.00000 | |
| 7 | Acenaphthene | 154 | 6.280 | 6.280 | (1.004) | 178627 | 2.00000 | 1.84 |
| 8 | Fluorene | 166 | 6.729 | 6.729 | (1.076) | 196625 | 2.00000 | 1.84 |
| * 9 | Phenanthrene-d10 | 188 | 7.558 | 7.558 | (1.000) | 205700 | 2.00000 | |
| 10 | Phenanthrene | 178 | 7.580 | 7.580 | (1.003) | 251923 | 2.00000 | 1.86 |
| 11 | Anthracene | 178 | 7.628 | 7.628 | (1.009) | 235969 | 2.00000 | 1.83 |
| $ 15 | o-Terphenyl | 230 | 7.869 | 7.869 | (0.781) | 143762 | 2.00000 | 1.81 |
| 12 | Fluoranthene | 202 | 8.665 | 8.665 | (1.146) | 226815 | 2.00000 | 1.81 |
| 14 | Pyrene | 202 | 8.885 | 8.885 | (0.882) | 229715 | 2.00000 | 1.72 |
| 16 | Benzo(a)Anthracene | 228 | 10.067 | 10.067 | (0.999) | 188989 | 2.00000 | 1.89 |
| * 13 | Chrysene-d12 | 240 | 10.078 | 10.078 | (1.000) | 152990 | 2.00000 | |
| 17 | Chrysene | 228 | 10.110 | 10.110 | (1.003) | 188417 | 2.00000 | 1.90 |
| 19 | Benzo(b)fluoranthene | 252 | 11.452 | 11.452 | (0.948) | 198647 | 2.00000 | 1.78 |
| 20 | Benzo(k)fluoranthene | 252 | 11.490 | 11.490 | (0.951) | 189243 | 2.00000 | 1.74 |
| 21 | Benzo(a)pyrene | 252 | 11.982 | 11.982 | (0.992) | 159766 | 2.00000 | 1.84 |
| * 18 | Perylene-d12 | 264 | 12.078 | 12.078 | (1.000) | 146830 | 2.00000 | |
| 22 | Indeno(1,2,3-cd)pyrene | 276 | 14.212 | 14.212 | (1.410) | 170197 | 2.00000 | 1.84 |
| 23 | Dibenzo(a,h)anthracene | 278 | 14.223 | 14.223 | (1.178) | 140796 | 2.00000 | 1.82 |
| 24 | Benzo(g,h,i)perylene | 276 | 14.881 | 14.881 | (1.232) | 147914 | 2.00000 | 1.79 |

Data File: ya0209q.d

Date: 02-JAN-2013 19:48

Client ID: Instrument: MSY5975.i

Sample Info: ICV-2898487; LLPAH Operator: VHB



**ATTACHMENT D**

**CASE NARRATIVE**

## Job ID: 680-85980-1

**Laboratory: TestAmerica Savannah**

**Narrative**

### CASE NARRATIVE

### Client: Oneida Total Integrated Enterprises LLC

### Project: 35th Avenue Superfund Site

### Report Number: 680-85980-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

**RECEIPT**

The samples were received on 12/20/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 4.2 C.

**SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS) LOW LEVEL PAH**

Samples CV0228B-CS-SP (680-85980-9), CV0230A-CS-SP (680-85980-10), CV0424A-CS-SP (680-85980-26), CV0424B-CS-SP (680-85980-27), CV0235A-CS (680-85980-28), CV0235B-CS (680-85980-29), CV0294B-CS (680-85980-32), CV0294C-CS (680-85980-33), FM0016A-CS (680-85980-37), FM0016B-GS (680-85980-38), CV0627A-CS (680-85980-39), HP0190A-CS-SP (680-85980-41), HP0190B-CS-SP (680-85980-42), HP0190C-CS-SP (680-85980-43), CV0451A-CS-SP (680-85980-44) and CV0451B-CS-SP (680-85980-45) were analyzed for Semivolatile Organic Compounds (GC/MS) Low level PAH in accordance with EPA SW846 Method 8270C. The samples were prepared on 12/31/2012 and analyzed on 01/02/2013.

Samples CV0228B-CS-SP (680-85980-9)[10X], CV0230A-CS-SP (680-85980-10)[10X], CV0424A-CS-SP (680-85980-26)[10X], CV0424B-CS-SP (680-85980-27)[10X], CV0235A-CS (680-85980-28)[10X], CV0235B-CS (680-85980-29)[10X], FM0016A-CS (680-85980-37)[10X], FM0016B-GS (680-85980-38)[10X], CV0627A-CS (680-85980-39)[10X], HP0190A-CS-SP (680-85980-41)[10X], HP0190B-CS-SP (680-85980-42)[10X], HP0190C-CS-SP (680-85980-43)[10X], CV0451A-CS-SP (680-85980-44)[10X] and CV0451B-CS-SP (680-85980-45)[10X] required dilution prior to analysis. As such, surrogate recoveries are not reported, and elevated reporting limits (RLs) are provided.The reporting limits have been adjusted accordingly.

Several analytes recovered outside the recovery criteria for the MS/MSD of sample CV0627A-CS (680-85980-39) in batch 680-261629.

Refer to the QC report for details.

No other difficulties were encountered during the Low-Level PAH analyses.

All other quality control parameters were within the acceptance limits.

**SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS) LOW LEVEL PAH**

Sample 121912-RB-SIEVE (680-85980-46) was analyzed for Semivolatile Organic Compounds (GC/MS) Low level PAH in accordance with EPA SW846 Method 8270C. The samples were prepared on 12/26/2012 and analyzed on 12/28/2012.

No difficulties were encountered during the Low-Level PAH analysis.

All quality control parameters were within the acceptance limits.

# ATTACHMENT E

# QUALIFIED SAMPLE RESULTS

## Client Sample ID: CV0228B-CS-SP

Date Collected: 12/18/12 14:50
Date Received: 12/20/12 10:27

**Lab Sample ID: 680-85980-9**
Matrix: Solid
Percent Solids: 71.9

### Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 190 | | 92 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| 2-Methylnaphthalene | 220 | | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Acenaphthene | 92 | U | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Acenaphthylene | 92 | U | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Anthracene | 92 | U | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Benzo[a]anthracene | 420 | | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Benzo[a]pyrene | 530 | | 92 | 16 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Benzo[b]fluoranthene | 950 | | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Benzo[g,h,i]perylene | 290 | | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Benzo[k]fluoranthene | 410 | | 92 | 27 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Chrysene | 570 | | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Dibenz(a,h)anthracene | 110 | | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Fluoranthene | 410 | | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Fluorene | 92 | U | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Indeno[1,2,3-cd]pyrene | 230 | | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Naphthalene | 140 | | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Pyrene | 410 | | 92 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |
| Phenanthrene | 260 | | 92 | 33 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:04 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 20:04* | *10* |

## Client Sample ID: CV0230A-CS-SP

Date Collected: 12/18/12 15:15
Date Received: 12/20/12 10:27

**Lab Sample ID: 680-85980-10**
Matrix: Solid
Percent Solids: 67.5

### Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 75 | J | 99 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| 2-Methylnaphthalene | 96 | J | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Acenaphthene | 99 | U | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Acenaphthylene | 99 | U | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Anthracene | 70 | J | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Benzo[a]anthracene | 830 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Benzo[a]pyrene | 1100 | | 99 | 18 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Benzo[b]fluoranthene | 1800 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Benzo[g,h,i]perylene | 850 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Benzo[k]fluoranthene | 700 | | 99 | 30 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Chrysene | 1100 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Dibenz(a,h)anthracene | 340 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Fluoranthene | 1000 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Fluorene | 99 | U | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Indeno[1,2,3-cd]pyrene | 670 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Naphthalene | 93 | J | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Pyrene | 770 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |
| Phenanthrene | 440 | | 99 | 36 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:34 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 20:34* | *10* |

## Client Sample ID: CV0424A-CS-SP

Lab Sample ID: 680-85980-26

Date Collected: 12/18/12 12:45
Date Received: 12/20/12 10:27

Matrix: Solid
Percent Solids: 75.7

**Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **1-Methylnaphthalene** | **56** | **J** | 88 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **2-Methylnaphthalene** | **76** | **J** | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| Acenaphthene | 88 | U | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| Acenaphthylene | 88 | U | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| Anthracene | 88 | U | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Benzo[a]anthracene** | **240** | | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Benzo[a]pyrene** | **240** | | 88 | 16 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Benzo[b]fluoranthene** | **370** | | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Benzo[g,h,i]perylene** | **130** | | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Benzo[k]fluoranthene** | **170** | | 88 | 26 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Chrysene** | **300** | | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Dibenz(a,h)anthracene** | **45** | **J** | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Fluoranthene** | **460** | | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| Fluorene | 88 | U | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Indeno[1,2,3-cd]pyrene** | **96** | | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Naphthalene** | **87** | **J** | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Pyrene** | **420** | | 88 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |
| **Phenanthrene** | **270** | | 88 | 32 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:31 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 16:31* | *10* |

## Client Sample ID: CV0424B-CS-SP

Lab Sample ID: 680-85980-27

Date Collected: 12/18/12 13:00
Date Received: 12/20/12 10:27

Matrix: Solid
Percent Solids: 80.5

**Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 83 | U | 83 | 38 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| 2-Methylnaphthalene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Acenaphthene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Acenaphthylene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Anthracene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Benzo[a]anthracene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| **Benzo[a]pyrene** | **24** | **J** | 83 | 15 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Benzo[b]fluoranthene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Benzo[g,h,i]perylene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Benzo[k]fluoranthene | 83 | U | 83 | 25 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Chrysene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Dibenz(a,h)anthracene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Fluoranthene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Fluorene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Indeno[1,2,3-cd]pyrene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Naphthalene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Pyrene | 83 | U | 83 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |
| Phenanthrene | 83 | U | 83 | 30 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:54 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 16:54* | *10* |

## Client Sample ID: CV0235A-CS

Lab Sample ID: 680-85980-28

Date Collected: 12/18/12 15:15
Date Received: 12/20/12 10:27

Matrix: Solid
Percent Solids: 73.3

**Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 60 | J | 91 | 42 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| 2-Methylnaphthalene | 61 | J | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Acenaphthene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Acenaphthylene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Anthracene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Benzo[a]anthracene | 93 | | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Benzo[a]pyrene | 99 | | 91 | 16 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Benzo[b]fluoranthene | 160 | | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Benzo[g,h,i]perylene | 61 | J | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Benzo[k]fluoranthene | 66 | J | 91 | 27 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Chrysene | 130 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Dibenz(a,h)anthracene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Fluoranthene | 180 | | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Fluorene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Indeno[1,2,3-cd]pyrene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Naphthalene | 91 | | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Pyrene | 160 | | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |
| Phenanthrene | 160 | | 91 | 33 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:18 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 17:18* | *10* |

## Client Sample ID: CV0235B-CS

Lab Sample ID: 680-85980-29

Date Collected: 12/18/12 15:35
Date Received: 12/20/12 10:27

Matrix: Solid
Percent Solids: 73.6

**Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 70 | J | 90 | 42 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| 2-Methylnaphthalene | 100 | J | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Acenaphthene | 52 | J | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Acenaphthylene | 90 | U J | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Anthracene | 110 | J | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Benzo[a]anthracene | 490 | | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Benzo[a]pyrene | 460 | | 90 | 16 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Benzo[b]fluoranthene | 560 | | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Benzo[g,h,i]perylene | 190 | | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Benzo[k]fluoranthene | 340 | | 90 | 27 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Chrysene | 480 | | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Dibenz(a,h)anthracene | 63 | J | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Fluoranthene | 1000 | J | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Fluorene | 47 | J | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Indeno[1,2,3-cd]pyrene | 160 | | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Naphthalene | 110 | | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Pyrene | 830 | | 90 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |
| Phenanthrene | 620 | | 90 | 32 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 17:41 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 17:41* | *10* |

# Client Sample Results

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-85980-1
SDG: 68085980-1

## Client Sample ID: CV0294B-CS

Date Collected: 12/18/12 14:19
Date Received: 12/20/12 10:27

**Lab Sample ID: 680-85980-32**
Matrix: Solid
Percent Solids: 63.7

### Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 16 | J | 10 | 4.8 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| 2-Methylnaphthalene | 22 | J | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Acenaphthene | 10 | UJ | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Acenaphthylene | 10 | UJ | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Anthracene | 5.7 | J | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Benzo[a]anthracene | 24 | | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Benzo[a]pyrene | 26 | | 10 | 1.9 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Benzo[b]fluoranthene | 39 | | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Benzo[g,h,i]perylene | 16 | | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Benzo[k]fluoranthene | 17 | | 10 | 3.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Chrysene | 37 | | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Dibenz(a,h)anthracene | 10 | UJ | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Fluoranthene | 60 | J | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Fluorene | 10 | UJ | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Indeno[1,2,3-cd]pyrene | 11 | J | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Naphthalene | 26 | | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Pyrene | 42 | | 10 | 5.1 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |
| Phenanthrene | 39 | | 10 | 3.7 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:43 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *28* | *X* | *36 - 131* | *12/31/12 13:00* | *01/02/13 21:43* | *1* |

## Client Sample ID: CV0294C-CS

Date Collected: 12/18/12 14:30
Date Received: 12/20/12 10:27

**Lab Sample ID: 680-85980-33**
Matrix: Solid
Percent Solids: 73.7

### Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 4.9 | J | 9.1 | 4.2 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| 2-Methylnaphthalene | 7.9 | J | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Acenaphthene | 9.1 | U | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Acenaphthylene | 9.1 | U | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Anthracene | 17 | | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Benzo[a]anthracene | 12 | | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Benzo[a]pyrene | 13 | | 9.1 | 1.6 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Benzo[b]fluoranthene | 16 | | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Benzo[g,h,i]perylene | 8.1 | J | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Benzo[k]fluoranthene | 9.6 | | 9.1 | 2.7 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Chrysene | 17 | U | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Dibenz(a,h)anthracene | 9.1 | U | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Fluoranthene | 26 | | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Fluorene | 9.1 | U | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Indeno[1,2,3-cd]pyrene | 6.0 | J | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Naphthalene | 10 | | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Pyrene | 18 | | 9.1 | 4.5 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |
| Phenanthrene | 16 | | 9.1 | 3.3 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 22:06 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *38* | | *36 - 131* | *12/31/12 13:00* | *01/02/13 22:06* | *1* |

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-85980-1
SDG: 68085980-1

**Client Sample ID: FM0016A-CS**
Date Collected: 12/19/12 08:40
Date Received: 12/20/12 10:27

**Lab Sample ID: 680-85980-37**
Matrix: Solid
Percent Solids: 70.2

**Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 90 | J | 95 | 44 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| 2-Methylnaphthalene | 150 | | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Acenaphthene | 95 | U | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Acenaphthylene | 95 | U | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Anthracene | 95 | U | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Benzo[a]anthracene | 120 | | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Benzo[a]pyrene | 110 | | 95 | 17 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Benzo[b]fluoranthene | 190 | | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Benzo[g,h,i]perylene | 66 | J | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Benzo[k]fluoranthene | 83 | J | 95 | 28 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Chrysene | 200 | U | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Dibenz(a,h)anthracene | 95 | U | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Fluoranthene | 240 | | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Fluorene | 95 | U | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Indeno[1,2,3-cd]pyrene | 95 | U | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Naphthalene | 120 | | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Pyrene | 210 | | 95 | 47 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |
| Phenanthrene | 210 | | 95 | 34 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:16 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 19:16* | *10* |

**Client Sample ID: FM0016B-GS**
Date Collected: 12/19/12 08:50
Date Received: 12/20/12 10:27

**Lab Sample ID: 680-85980-38**
Matrix: Solid
Percent Solids: 67.1

**Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 150 | | 99 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| 2-Methylnaphthalene | 250 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Acenaphthene | 99 | U | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Acenaphthylene | 99 | U | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Anthracene | 99 | U | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Benzo[a]anthracene | 210 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Benzo[a]pyrene | 180 | | 99 | 18 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Benzo[b]fluoranthene | 270 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Benzo[g,h,i]perylene | 120 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Benzo[k]fluoranthene | 130 | | 99 | 30 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Chrysene | 330 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Dibenz(a,h)anthracene | 99 | U | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Fluoranthene | 480 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Fluorene | 99 | U | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Indeno[1,2,3-cd]pyrene | 96 | J | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Naphthalene | 170 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Pyrene | 340 | | 99 | 49 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |
| Phenanthrene | 410 | | 99 | 36 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 20:57 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 20:57* | *10* |



Sample results have been qualified by URS in accordance with the Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1 (OTIE, October 2012)

## Client Sample ID: CV0627A-CS

Lab Sample ID: 680-85980-39

Date Collected: 12/19/12 09:15
Date Received: 12/20/12 10:27

Matrix: Solid
Percent Solids: 72.2

**Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 140 | | 93 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| 2-Methylnaphthalene | 220 | J | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Acenaphthene | 93 | U | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Acenaphthylene | 93 | U | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Anthracene | 93 | U | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Benzo[a]anthracene | 200 | J | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Benzo[a]pyrene | 190 | | 93 | 17 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Benzo[b]fluoranthene | 370 | | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Benzo[g,h,i]perylene | 110 | | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Benzo[k]fluoranthene | 180 | | 93 | 28 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Chrysene | 340 | | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Dibenz(a,h)anthracene | 93 | U | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Fluoranthene | 330 | J | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Fluorene | 93 | U | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Indeno[1,2,3-cd]pyrene | 92 | J | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Naphthalene | 280 | | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Pyrene | 310 | | 93 | 46 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |
| Phenanthrene | 310 | | 93 | 33 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 18:52 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 18:52* | *10* |

## Client Sample ID: HP0190A-CS-SP

Lab Sample ID: 680-85980-41

Date Collected: 12/19/12 09:50
Date Received: 12/20/12 10:27

Matrix: Solid
Percent Solids: 76.1

**Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 88 | U | 88 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| 2-Methylnaphthalene | 48 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Acenaphthene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Acenaphthylene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Anthracene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Benzo[a]anthracene | 77 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Benzo[a]pyrene | 98 | | 88 | 16 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Benzo[b]fluoranthene | 150 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Benzo[g,h,i]perylene | 79 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Benzo[k]fluoranthene | 58 | J | 88 | 26 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Chrysene | 110 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Dibenz(a,h)anthracene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Fluoranthene | 97 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Fluorene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Indeno[1,2,3-cd]pyrene | 60 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Naphthalene | 49 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Pyrene | 76 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |
| Phenanthrene | 72 | J | 88 | 31 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 21:20 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 21:20* | *10* |

## Client Sample ID: HP0190B-CS-SP

Lab Sample ID: 680-85980-42

Date Collected: 12/19/12 10:00
Date Received: 12/20/12 10:27

Matrix: Solid
Percent Solids: 73.9

**Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 91 | U | 91 | 42 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| 2-Methylnaphthalene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| Acenaphthene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| Acenaphthylene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| Anthracene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| **Benzo[a]anthracene** | **45** | **J** | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| **Benzo[a]pyrene** | **58** | **J** | 91 | 16 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| **Benzo[b]fluoranthene** | **73** | **J** | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| **Benzo[g,h,i]perylene** | **46** | **J** | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| **Benzo[k]fluoranthene** | **44** | **J** | 91 | 27 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| **Chrysene** | 62 | ~~J~~ U | 91 | ~~45~~ | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| Dibenz(a,h)anthracene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| **Fluoranthene** | **65** | **J** | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| Fluorene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| Indeno[1,2,3-cd]pyrene | 91 | U | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| **Naphthalene** | **86** | **J** | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| **Pyrene** | **57** | **J** | 91 | 45 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |
| **Phenanthrene** | **53** | **J** | 91 | 32 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:20 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 15:20* | *10* |

## Client Sample ID: HP0190C-CS-SP

Lab Sample ID: 680-85980-43

Date Collected: 12/19/12 10:15
Date Received: 12/20/12 10:27

Matrix: Solid
Percent Solids: 76.9

**Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 87 | U | 87 | 40 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| 2-Methylnaphthalene | 87 | U | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| Acenaphthene | 87 | U | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| Acenaphthylene | 87 | U | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| Anthracene | 87 | U | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| **Benzo[a]anthracene** | **140** | | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| **Benzo[a]pyrene** | **190** | | 87 | 16 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| **Benzo[b]fluoranthene** | **250** | | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| **Benzo[g,h,i]perylene** | **130** | | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| **Benzo[k]fluoranthene** | **110** | | 87 | 26 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| **Chrysene** | **170** | U | ~~87~~ | ~~43~~ | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| Dibenz(a,h)anthracene | 87 | U | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| **Fluoranthene** | **160** | | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| Fluorene | 87 | U | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| **Indeno[1,2,3-cd]pyrene** | **96** | | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| **Naphthalene** | **51** | **J** | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| **Pyrene** | **160** | | 87 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |
| **Phenanthrene** | **87** | | 87 | 31 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 15:44 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *0* | *D* | *36 - 131* | *12/31/12 13:00* | *01/02/13 15:44* | *10* |

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-85980-1
SDG: 68085980-1

## Client Sample ID: CV0451A-CS-SP

Lab Sample ID: 680-85980-44
Matrix: Solid
Percent Solids: 76.4

Date Collected: 12/19/12 09:00
Date Received: 12/20/12 10:27

### Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 64 | J | 88 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| 2-Methylnaphthalene | 130 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Acenaphthene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Acenaphthylene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Anthracene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Benzo[a]anthracene | 110 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Benzo[a]pyrene | 91 | | 88 | 16 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Benzo[b]fluoranthene | 150 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Benzo[g,h,i]perylene | 58 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Benzo[k]fluoranthene | 50 | J | 88 | 26 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Chrysene | 130 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Dibenz(a,h)anthracene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Fluoranthene | 160 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Fluorene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Indeno[1,2,3-cd]pyrene | 46 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Naphthalene | 110 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Pyrene | 150 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |
| Phenanthrene | 130 | | 88 | 31 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 16:07 | 10 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| o-Terphenyl | 0 | D | 36 - 131 | 12/31/12 13:00 | 01/02/13 16:07 | 10 |

## Client Sample ID: CV0451B-CS-SP

Lab Sample ID: 680-85980-45
Matrix: Solid
Percent Solids: 76.0

Date Collected: 12/19/12 09:15
Date Received: 12/20/12 10:27

### Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 46 | J | 88 | 41 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| 2-Methylnaphthalene | 80 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Acenaphthene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Acenaphthylene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Anthracene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Benzo[a]anthracene | 100 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Benzo[a]pyrene | 120 | | 88 | 16 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Benzo[b]fluoranthene | 180 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Benzo[g,h,i]perylene | 68 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Benzo[k]fluoranthene | 81 | J | 88 | 26 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Chrysene | 140 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Dibenz(a,h)anthracene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Fluoranthene | 170 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Fluorene | 88 | U | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Indeno[1,2,3-cd]pyrene | 49 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Naphthalene | 79 | J | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Pyrene | 160 | | 88 | 43 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |
| Phenanthrene | 130 | | 88 | 31 | ug/Kg | ☼ | 12/31/12 13:00 | 01/02/13 19:40 | 10 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| o-Terphenyl | 0 | D | 36 - 131 | 12/31/12 13:00 | 01/02/13 19:40 | 10 |



Sample results have been qualified by URS in accordance with the Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1 (OTIE, October 2012)

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-85980-1
SDG: 68085980-1

**Client Sample ID: 121912-RB-SIEVE**
Date Collected: 12/19/12 12:00
Date Received: 12/20/12 10:27

**Lab Sample ID: 680-85980-46**
Matrix: Water

**Method: 8270C_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Acenaphthylene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Anthracene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Benzo[a]anthracene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Benzo[a]pyrene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Benzo[b]fluoranthene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Benzo[g,h,i]perylene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Benzo[k]fluoranthene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| **Chrysene** | **0.11** | **J** | 0.20 | 0.045 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Dibenz(a,h)anthracene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Fluoranthene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Fluorene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Indeno[1,2,3-cd]pyrene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| 1-Methylnaphthalene | 0.40 | U | 0.40 | 0.40 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| 2-Methylnaphthalene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Naphthalene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Phenanthrene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |
| Pyrene | 0.20 | U | 0.20 | 0.10 | ug/L | | 12/26/12 18:09 | 12/28/12 17:05 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *56* | | *41 - 130* | *12/26/12 18:09* | *12/28/12 17:05* | *1* |



Sample results have been qualified by URS in accordance with the Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1 (OTIE, October 2012)